

In re Patent Application of:
KARL GUENTHER, et al
Serial No. 10/685,300
Filing Date: 10/14/2003

In the Claims:

1. (currently amended) A transportation system comprising:
a running surface;
a support structure for positioning the running surface above ground level;
a carrying vehicle operable along the running surface; and
a car body suspended from the carrying vehicle, wherein a center of rotation of the car body is above a connection therebetween thus effectively extending a radius of rotation thereof, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the carrying vehicle along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load.

2. (original) A system according to claim 1, wherein the carrying vehicle comprises:
a truck;
wheels operable with the truck for rolling along the running surface; and
a chassis carried by the truck, wherein the car body is suspended therefrom.

3. (original) A system according to claim 1, further comprising a suspension member connecting the carrying vehicle to the car body.

4. (original) A system according to claim 3, wherein the suspension member is pivotally connected to the carrying vehicle, and wherein the car body is allowed to freely rotate about a longitudinal axis thereof while having a restricted movement in a longitudinal direction.

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5. (original) A system according to claim 1, further comprising at least one of a generally U-shaped duct having a slot therein formed by opposing flanged portions, an I-beam having opposing lower flanged portions, and an I-beam pair having opposing outer flange portions, upper surfaces of which form the running surface.

6. (original) A system according to claim 1, further comprising a rail pair forming a track carried by the running surface, wherein the carrying vehicle is operable thereon.

7. (original) A system according to claim 6, wherein at least a portion of the track is superelevated by at least eight degrees.

8. (original) A system according to claim 1, wherein at least a portion of the running surface is superelevated.

9. (currently amended) A system according to claim 8, wherein the superelevated portion of running surface is inclined by at least eight degrees.

10. (original) A system according to claim 8, wherein the at least a portion of the running surface includes curved portions thereof.

11. (currently amended) A transportation system comprising:
a running surface;
a support structure for positioning the running surface above ground level;
a truck operable along the running surface;
a chassis carried by the truck; and
a car body suspended from the chassis, wherein a center of rotation of the car body is at or above the connection therebetween, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to

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a tilted orientation during operation of the truck along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load.

12. (currently amended) A system according to claim 11, further comprising a generally U-shaped duct having a slot therein formed by opposing flanged portions, an upper surface of which forms the running surface.

13. (original) A system according to claim 11, further comprising at least one of an I-beam having opposing lower flanged portions and an I-beam pair having opposing outer flange portions, upper surfaces of which form the running surface.

14. (original) A system according to claim 11, wherein at least two chassis are connected to form a train, and wherein the at least two chassis are connected to a single truck for articulating movement therewith.

15. (original) A system according to claim 11, wherein the support structure comprises a column and cooperating arm portion for supporting the running surface above the ground level.

16. (original) A system according to claim 11, wherein the truck comprises a frame having wheels operable therewith for transporting the truck along the running surface.

17. (original) A system according to claim 11, wherein the running surface comprises a rail pair forming a track.

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18. (original) A system according to claim 17, wherein the rail pair and wheels are steel, and wherein wheel pairs are synchronized and tapered for self centering while rolling along the track.

19. (original) A system according to claim 17, wherein the track is superelevated at least along a curved portion thereof.

20. (original) A system according to claim 11, wherein at least a portion of the running surface is superelevated.

21. (currently amended) A system according to claim 20, wherein the superelevated portion of the running surface is inclined by at least eight degrees.

22. (original) A system according to claim 11, wherein the chassis is carried by at least two trucks.

23. (original) A system according to claim 11, wherein the car body comprises at least one of a passenger car, a freight car, and a combination thereof.

24. (currently amended) A system according to claim 23, wherein a plurality of car bodies are is suspended from a plurality of chassis, wherein one chassis is connected to an adjacent chassis, and wherein adjacent car bodies are accessible therebetween.

25. (original) A system according to claim 11, further comprising a suspension member for removably suspending the car body from the chassis, the suspension member having a proximal end operable with the chassis and an opposing distal end connected to the car body.

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26. (currently amended) A system according to claim 25, further comprising a connector operable with the suspension member for ~~operable~~ operably attaching and detaching the car body from the chassis, the connector having a vise for receiving the suspension member proximal end therein and a turnbuckle for securing the vise in a locking position.

27. (original) A system according to claim 25, wherein the suspension member comprises:

- a first support carried by the chassis; and
- a linking arm connected between the car body and the first support.

28. (currently amended) A system according to claim 27, further comprising:

- a first bracket pair affixed to the car body; and
- a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the chassis, and wherein the center of rotation is laterally displaced during rotation of the car body.

29. (original) A system according to claim 27, further comprising:

- an arcuate member rotatably operable with a surface of the first support;
- a bracket having a proximal end rotatably operable with the arcuate member and a distal end affixed to the car body.

30. (original) A system according to claim 29, wherein the surface of the first support comprises a concave shape for receiving the arcuate member.

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31. (original) A system according to claim 29, wherein the arcuate member is circular in cross section.

32. (original) A system according to claim 27, wherein the linking arm comprises at least one of a spring, a piston, and a combination thereof.

33. (original) A system according to claim 11, further comprising a winch and cable mechanism carried by the chassis and operable for raising and lowering the car body therefrom.

34. (original) A system according to claim 11, further comprising a grapple operably connected to the chassis, and wherein the car body comprises a container for carrying freight therein.

35. (original) A system according to claim 34, wherein the grapple comprises:
an upper member removably suspended from the chassis; and
opposing side members slidably connected to the upper member for cradling the container therebetween.

36. (currently amended) A system according to claim 11, further comprising a driving means operable with the truck for driving the truck along the running surface, wherein wheels operable therewith rotate at a synchronized speed.

37. (original) A system according to claim 36, wherein the driving means comprises an electric motor operable with power delivered thereto from a contact strip carried with the running surface.

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38. (currently amended) A transportation system comprising:
a running surface suspended above ground level;
a carrying vehicle having wheels operable over the running surface; and
a car body suspended below the carrying vehicle, wherein a center of rotation of the car body is thereabove, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the carrying vehicle along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load.

39. (original) A system according to claim 38, further comprising a suspension member for removably suspending the car body from the carrying vehicle, the suspension member having a proximal end operable with the carrying vehicle and an opposing distal end connected to the car body.

40. (currently amended) A system according to claim 39, wherein the suspension member comprises:

- a first support carried by the ~~chassis~~ carrying vehicle; and
- a linking arm connected between the car body and the first support.

41. (currently amended) A system according to claim 40, further comprising:
a first bracket pair affixed to the car body; and
a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the ~~chassis~~ carrying vehicle, wherein the center of rotation is laterally

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displaced during rotation of the car body.

42. (original) A system according to claim 40, further comprising:
an arcuate member rotatably operable with a surface of the first support;
a bracket having a proximal end rotatably operable with the arcuate member and
a distal end affixed to the car body.

43. (original) A system according to claim 42, wherein the surface of the first
support comprises a concave shape for receiving the arcuate member.

44. (original) A system according to claim 42, wherein the arcuate member is
circular in cross section.

45. (original) A system according to claim 40, wherein the linking arm comprises
at least one of a spring, a piston, and a combination thereof.

46. (currently amended) A transportation method comprising:
suspending a running surface above ground level;
operating a carrying vehicle longitudinally along the running surface, wherein the
running surface includes a curved portion; and
suspending a car body from the carrying vehicle for providing a center of lateral
rotation of the car body above the carrying vehicle, the car body having a floor surface
for carrying a load thereon, wherein the floor surface moves from a horizontal
orientation to a tilted orientation during operation of the carrying vehicle along the
curved portion of the running surface so as to result in a pendulum like movement of the
floor surface and thus the load.

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47. (original) A method according to claim 46, further comprising providing a U-shaped duct for transporting the carrying vehicle therein, wherein flange portions of the duct provide the running surface.

48. (original) A method according to claim 46, further comprising providing at least one I-beam for operating the carrying vehicle along flanges thereof, which flanges form the running surface.

49. (original) A method according to claim 46, further comprising detaching the car body from the carrying vehicle for operating the carrying vehicle along the running surface.

50. (original) A method according to claim 46, further comprising:
providing a suspension member;
connecting a proximal end of a suspension member to the carrying vehicle at a pivot location thereon;
connecting a distal end of the suspension member to the car body, wherein the center of rotation of the car body is above the pivot location.

51. (original) A method according to claim 50, wherein the proximal end connecting comprises pivotally connecting the proximal end to the chassis for allowing a free transverse movement of the car body and limiting a longitudinal movement thereof.

52. (currently amended) A method according to claim 46, further comprising:
placing a track on the running surface for receiving the wheels of the carrying vehicle; and
superelevating the track at least along the curved ~~sections thereof~~ portions of the

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running surface.

53. (original) A method according to claim 52, wherein the superelevation is at least eight degrees.

54. (original) A method according to claim 46, further comprising:
attaching multiple carrying vehicles together for operating along the running surface;
attaching a car body to each of the multiple carrying vehicles; and
providing access between adjacent car bodies.

55. (original) A method according to claim 46, wherein the car body comprises a container, and wherein a grappling mechanism is suspended from the carrying vehicle for transporting the container.

56. (original) A method according to claim 46, further comprising removing the car body from the carrying vehicle.

57. (original) A method according to claim 46, further comprising:
aligning a surface of a platform with a floor of the car body;
placing rolling elements onto the surface and the floor; and
pushing a freight container from the platform to the car body over the rolling elements; and
covering the rolling elements for permitting pedestrian traffic thereon.

58. (original) A method according to claim 46, further comprising:
operating at least a second carrying vehicle along the running surface;

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connecting the at least second carrying vehicle to the carrying vehicle to from a train;

connecting a second car body to the at least second chassis;

limiting longitudinal rotation of each car body about the chassis carried thereby while permitting a free transverse rotation thereabout; and
providing access between car bodies at adjacent ends thereof.

59. (original) A method according to claim 46 comprising:

disconnecting the car body from the carrying vehicle;

suspending a grapple from the carrying vehicle; and

carrying containers within the grapple for transporting thereof.

60. (new) A transportation system comprising:

a running surface having a rail pair forming a track carried thereby;

a support structure for positioning the running surface above ground level;

a truck operable along the running surface, the truck having wheel pairs synchronized and tapered for self centering while rolling along the track;

a chassis carried by the truck and;

a car body suspended from the chassis.

61. (new) A system according to claim 60 wherein the rail pair and wheel pairs are steel.

62. (new) A system according to claim 60, wherein the track is superelevated at least along a curved portion thereof.

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63. (new) A system according to claim 62, wherein the superelevated portion of the running surface is inclined by at least eight degrees.

64. (new) A system according to claim 62, wherein the superelevation is within 16 degrees and a swing out of the car body to within 16 degrees beneath the chassis, thus permitting a combined total swing out of up to 32 degrees of tilt for permitting increased car body speeds on curves.

65. (new) A system according to claim 60, wherein the wheel pairs include coned wheels.

66. (new) A system according to claim 60, wherein at least one of the wheel pairs comprises electrically coupled motor wheels.

67. (new) A system according to claim 66, wherein the electrically coupled motor wheels include double flanged wheels.

68. (new) A transportation system comprising:
a running surface having a rail pair forming a track carried thereby;
a support structure for positioning the running surface above ground level;
a carrying vehicle operable along the running surface, the carrying vehicle having wheel pairs synchronized for self centering while rolling along the track; and
a car body suspended from the carrying vehicle.

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69. (new) A system according to claim 68, wherein a center of rotation of the car body is above a connection to the carrying vehicle thus effectively extending a radius of rotation thereof, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the carrying vehicle along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load.

70. (new) A system according to claim 68, wherein the track and wheel pairs are steel.

71. (new) A system according to claim 68, wherein the track is superelevated at least along a curved portion thereof.

72. (new) A system according to claim 71, wherein the superelevated portion of the running surface is inclined by at least eight degrees.

73. (new) A transportation system comprising:

a running surface suspended above ground level;

a carrying vehicle having wheels operable over the running surface;

a car body;

a suspension member suspending the car body from the carrying vehicle, the suspension member having a proximal end operable with the carrying vehicle and an opposing distal end connected to the car body, the suspension member having a first support carried by the carrying vehicle, a linking arm connected between the car body and the first support, an arcuate member rotatably operable with a surface of the first support, and a bracket having a proximal end rotatably operable with the arcuate member and a distal end affixed to the car body.

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74. (currently amended) A system according to claim 73, further comprising:
a first bracket pair affixed to the car body; and
a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the carrying vehicle, wherein the center of rotation is laterally displaced during rotation of the car body.

75. (original) A system according to claim 73, wherein the surface of the first support comprises a concave shape for receiving the arcuate member.

76. (original) A system according to claim 73, wherein the arcuate member is circular in cross section.

77. (original) A system according to claim 73, wherein the linking arm comprises at least one of a spring, a piston, and a combination thereof.

78. (new) A transportation system comprising:
a running surface suspended above ground level;
a carrying vehicle having wheels operable over the running surface; and
a car body suspended below the carrying vehicle, wherein a center of rotation of the car body is thereabove;
a suspension member for removably suspending the car body from the carrying vehicle, the suspension member having a proximal end operable with the carrying vehicle and an opposing distal end connected to the car body, wherein the suspension

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member includes a first support carried by the carrying vehicle and a linking arm connected between the car body and the first support, and wherein the linking arm includes at least one of a spring, a piston, and a combination thereof.

79. (new) A system according to claim 78, further comprising:
a first bracket pair affixed to the car body; and
a second bracket pair affixed to the first support, wherein the linking arm comprises a linking arm pair, each linking arm of the linking arm pair having proximal and distal ends slidably connected to first and second brackets of the first and second bracket pairs for providing a lateral rotation of the car body about the center of rotation located above the carrying vehicle, wherein the center of rotation is laterally displaced during rotation of the car body.

80. (new) A system according to claim 78, further comprising:
an arcuate member rotatably operable with a surface of the first support;
a bracket having a proximal end rotatably operable with the arcuate member and a distal end affixed to the car body.

81. (new) A system according to claim 78, wherein the surface of the first support comprises a concave shape for receiving the arcuate member.

82. (new) A system according to claim 78, wherein the arcuate member is circular in cross section.

83. (new) A transportation system comprising:
a running surface having a rail pair forming a track carried thereby, wherein the track is superelevated at least along a curved portion thereof.

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a support structure for positioning the running surface above ground level;
a carrying vehicle operable along the running surface; and
a car body suspended from the carrying vehicle.

84. (new) A system according to claim 83, wherein a center of rotation of the car body is above a connection to the carrying vehicle thus effectively extending a radius of rotation thereof, the car body having a floor surface for carrying a load thereon, wherein the floor surface moves from a horizontal orientation to a tilted orientation during operation of the carrying vehicle along a curved portion of the running surface so as to result in a pendulum like movement of the floor surface and thus the load.

85. (new) A system according to claim 83, wherein the track and wheel pairs are steel.

86. (new) A system according to claim 83, wherein the superelevated portion of the running surface is inclined by at least eight degrees.

87. (new) A system according to claim 83, wherein the wheel pairs are synchronized for self centering while rolling along the track